

# 4

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## SEQUENCE LISTING

&lt;110&gt; Estell, David A.

&lt;120&gt; Proteases From Gram-Positive Organisms

&lt;130&gt; GC394C1-US

&lt;140&gt; US 09/932,183

&lt;141&gt; 2001-08-17

&lt;150&gt; US 09/308,375

&lt;151&gt; 1999-05-14

&lt;150&gt; PCT/US98/18828

&lt;151&gt; 1998-09-08

&lt;150&gt; EP9719636.4

&lt;151&gt; 1997-09-15

&lt;160&gt; 3

&lt;170&gt; FastSEQ for Windows Version 3.0

&lt;210&gt; 1

&lt;211&gt; 7100

&lt;212&gt; DNA

&lt;213&gt; Bacillus subtilis

&lt;400&gt; 1

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- 2 -

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&lt;211&gt; 2285

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&lt;213&gt; Bacillus subtilis

&lt;400&gt; 2

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 305 310 315 320  
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 Lys Ser Met Ser Thr Tyr Leu Ile Ser Gly Ser Leu Phe Tyr Gly Ala  
 340 345 350  
 Ile Ser Gly Leu Lys Glu Met Val Ser Gln Ala Ile Glu Ile Asp Thr  
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 370 375 380  
 Asn Glu Leu Leu Gln Glu Ser Ile Asp Leu Gly Asp Thr Leu Ser Asn  
 385 390 395 400  
 Lys Ile Thr Asp Ile Leu Gln Met Thr Gly Asp Phe Gly Arg Met Gly  
 405 410 415  
 Phe Asp Glu Ser Glu Leu Ser Thr Leu Thr Lys Thr Ala Gln Val Leu  
 420 425 430  
 Gln Asn Val Ser Asp Leu Thr Pro Asp Asp Thr Val Asn Thr Leu Thr

- 6 -

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Gly Val Glu Leu Asn Asp Leu Ile Gly Tyr Thr Thr Ala Ile Ala Ser		
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Thr Thr Arg Glu Ser Gly Asn Ile Val Gly Asn Ser Leu Lys Thr Ile		
515	520	525
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Thr Glu Phe Ala Ile Ala Ala Ser Asp Ala Phe Ile Ser Asp Gly Leu		
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Ile Glu Phe Thr Gln Ala Ala Gly Ser Leu Leu Asn Ala Ser Thr Gly		
660	665	670
Val Ile Lys Ser Val Gly Phe Leu Pro Pro Leu Leu Ala Ala Val Ser		
675	680	685
Thr Ala Thr Leu Leu Leu Ser Lys Asn Thr Arg Thr Leu Ala Ser Ser		
690	695	700
Leu Ile Leu Gly Thr Arg Ala Met Gly Gln Glu Thr Leu Ala Thr Ala		
705	710	715
Gly Leu Glu Ala Gly Met Thr Arg Ala Ala Val Ala Ser Arg Val Leu		
725	730	735
Lys Thr Ala Leu Arg Gly Leu Leu Val Ser Thr Leu Val Gly Gly Ala		
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770	775	780
Val Glu Ala Ile Thr Thr Asn Lys Asp Ser Thr Asp Lys Leu Ile Gln		
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Gln Tyr Lys Glu Leu Gln Lys Val Lys Glu Ser Arg Ser Leu Thr Ser		
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915 920 925  
Gln Ser Met Leu Lys Ala Gln Ser Asp Ile Glu Ser Gly Asn Ala Lys  
930 935 940  
Val Lys Asp Ser Val Leu Ser Ile Ala Asn Ala Tyr Ser Ser Ile Asp  
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Asn Leu Lys Asp Asp Leu Asp Pro Glu Glu Leu Glu Lys Phe Ser Ser  
980 985 990  
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Thr Asp Gln Gln Glu Lys Ala Asn Glu Glu Thr Lys Thr Ser Met Tyr

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- 9 -

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Gln Ala Lys Ile Gln Gln Gln Lys Val Asn Trp Ile Gln Lys Glu Ile  
1780 1785 1790  
Lys Thr Asn Lys Ala Leu Asn Ser Ala Gln Arg Ala Gln Leu Gln Glu  
1795 1800 1805  
Glu Leu Lys Gln Ala Lys Leu Asp Leu Ile Ser Val Gln Asp Gln Val  
1810 1815 1820  
Arg Glu Leu Gln Lys Gln Leu Val Gln Ser Lys Val Asp Glu Thr Leu  
1825 1830 1835 1840  
Lys Ser Ile Glu Lys Ser Ser Ser Lys Thr Gln Gly Lys Ile Lys Asp  
1845 1850 1855  
Val Asp Asn Lys Ile Ser Met Thr Glu Glu Asp Glu Asp Lys Val Lys  
1860 1865 1870  
Tyr Tyr Ser Lys Gln Ile Lys Leu Ile Gln Gln Gln Lys Glu Ala  
1875 1880 1885  
Lys Lys Tyr Ile Lys Gln Leu Glu Glu Gln Lys Lys Ala Ala Lys Gly  
1890 1895 1900  
Phe Pro Asp Ile Gln Glu Gln Ile Thr Glu Glu Met Gln Asn Trp Lys  
1905 1910 1915 1920  
Asp Lys Gln Lys Asp Phe Asn Leu Glu Leu Tyr Asn Thr Lys Lys Ser  
1925 1930 1935  
Ile Lys Asp Ile Tyr Lys Ser Leu Ala Asp Glu Val Val Ser Ile Tyr  
1940 1945 1950  
Lys Glu Met Tyr Glu Lys Met Arg Asp Ile Glu Leu Glu Ala His Gln  
1955 1960 1965  
Lys Ala Thr Gln Asp Leu Ile Asp Glu Ile Asp Lys Thr Asp Asp Glu  
1970 1975 1980  
Ala Lys Phe Gln Lys Glu Leu Lys Glu Arg Gln Asp Ser Ile Gln Lys  
1985 1990 1995 2000  
Leu Thr Asp Gln Ile Asn Gln Tyr Ser Leu Asp Asp Ser Glu Phe Gly  
2005 2010 2015  
Lys Ser Lys Val Lys Glu Leu Thr Glu Gln Leu Gln Lys Glu Gln Leu  
2020 2025 2030  
Asp Leu Asp Asp Phe Leu Lys Asp Arg Glu Ser Asn Lys Arg Lys Glu  
2035 2040 2045  
Ala Leu Gln Asp Gln Leu Glu Lys Asp Glu Glu Ser Ile Asn Asn Lys  
2050 2055 2060  
Tyr Asp Asn Leu Val Asn Asp Glu Arg Ala Phe Lys Lys Leu Glu Asp  
2065 2070 2075 2080  
Lys Ile Met Asn Gly Lys Ile Thr Asp Ile Ala Lys Gln Leu Asn Glu  
2085 2090 2095  
Phe Ser Lys Phe Ile Asn Thr Asn Met Glu Ser Ile Gly Lys Ser Ile  
2100 2105 2110  
Ser Asn Asn Leu Ile Asp Lys Leu Lys Glu Ala Ser Asn Ala Leu Asn  
2115 2120 2125  
Thr Ala Val Lys Gly Asn Thr Thr Gly Lys Lys Val Ser Ser Phe Ala  
2130 2135 2140  
Ser Gly Gly Tyr Thr Gly Thr Gly Leu Gly Ala Gly Lys Leu Ala Phe  
2145 2150 2155 2160  
Leu His Asp Lys Glu Leu Ile Leu Asn Lys Thr Asp Thr Ala Asn Ile  
2165 2170 2175  
Leu Asp Thr Val Lys Ala Val Arg Glu Thr Ala Val Asp Asp Ser Pro  
2180 2185 2190  
Lys Trp Gly Gln Gly Val Lys Leu Ala Asp Leu Ile Lys Lys Gly Ile

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2195                      2200                      2205  
 Thr Ser Ile Pro Ser Leu Val Pro Asn Val Asn Gln Ser Met Leu Thr  
 2210                      2215                      2220  
 Asn Ser Leu Ile Pro Asn Leu Lys Lys Ile Glu Ile Pro Ser Lys Thr  
 2225                      2230                      2235                      2240  
 Ile Ala Ser Ser Gly Asp Lys Thr Ile Asn Leu Thr Asn Thr Phe His  
 2245                      2250                      2255  
 Ile Asp Lys Leu Ile Gly Gly Glu Ser Gly Ala Arg Ser Met Phe Glu  
 2260                      2265                      2270  
 Ser Ile Lys Asn Glu Val Val Lys Leu Asn Gly Ser Met  
 2275                      2280                      2285

&lt;210&gt; 3

&lt;211&gt; 316

&lt;212&gt; PRT

&lt;213&gt; Pseudomonas

&lt;400&gt; 3

Pro Lys Val Leu Leu Thr Leu Met Val Met Gln Ser Gly Pro Leu Gly  
 1                      5                      10                      15  
 Ala Pro Asp Glu Arg Ala Leu Ala Ala Pro Leu Gly Arg Leu Ser Ala  
 20                      25                      30  
 Lys Arg Gly Phe Asp Ala Gln Val Arg Asp Val Leu Gln Gln Leu Ser  
 35                      40                      45  
 Arg Arg Tyr Tyr Gly Phe Glu Glu Tyr Gln Leu Arg Gln Ala Ala Ala  
 50                      55                      60  
 Arg Lys Ala Val Gly Glu Asp Gly Leu Asn Ala Ala Ser Ala Ala Leu  
 65                      70                      75                      80  
 Leu Gly Leu Leu Arg Glu Gly Ala Lys Val Ser Ala Val Gln Gly Gly  
 85                      90                      95  
 Asn Pro Leu Gly Ala Tyr Ala Gln Thr Phe Gln Arg Leu Phe Gly Thr  
 100                      105                      110  
 Pro Ala Ala Glu Leu Leu Gln Pro Ser Asn Arg Val Ala Arg Gln Leu  
 115                      120                      125  
 Gln Ala Lys Ala Ala Leu Ala Pro Pro Ser Asn Leu Met Gln Leu Pro  
 130                      135                      140  
 Trp Arg Gln Gly Tyr Ser Trp Gln Pro Asn Gly Ala His Ser Asn Thr  
 145                      150                      155                      160  
 Gly Ser Gly Tyr Pro Tyr Ser Ser Phe Asp Ala Ser Tyr Asp Trp Pro  
 165                      170                      175  
 Arg Trp Gly Ser Ala Thr Tyr Ser Val Val Ala Ala His Ala Gly Thr  
 180                      185                      190  
 Val Arg Val Leu Ser Arg Cys Gln Val Arg Val Thr His Pro Ser Gly  
 195                      200                      205  
 Trp Ala Thr Asn Tyr Tyr His Met Asp Gln Ile Gln Val Ser Asn Gly  
 210                      215                      220  
 Gln Gln Val Ser Ala Asp Thr Lys Leu Gly Val Tyr Ala Gly Asn Ile  
 225                      230                      235                      240  
 Asn Thr Ala Leu Cys Glu Gly Gly Ser Ser Thr Gly Pro His Leu His  
 245                      250                      255  
 Phe Ser Leu Leu Tyr Asn Gly Ala Phe Val Ser Leu Gln Gly Ala Ser  
 260                      265                      270  
 Phe Gly Pro Tyr Arg Ile Asn Val Gly Thr Ser Asn Tyr Asp Asn Asp

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		275					280					285					
Cys	Arg	Arg	Tyr	Tyr	Phe	Tyr	Asn	Gln	Ser	Ala	Gly	Thr	Thr	His	Cys		
	290					295					300						
Ala	Phe	Arg	Pro	Leu	Tyr	Asn	Pro	Gly	Leu	Ala	Leu						
305					310					315							